

REMARKS

This is responsive to the Office Action issued on June 13, 2003. By this response claims 13, 14, 28, 29, 31 and 32 are amended, and claims 27 and 30 are cancelled without prejudice. No new matter is introduced. Claims 4, 6, 8-10, 12-16, 20, 22 and 24-16, 28, 29, 31 and 32 are now active for examination.

The Office Action dated June 13, 2003 allowed claims 9, 10, 12, 25 and 26, and rejected claims 4, 6, 8, 13, 14, 16, 20, 22, 24, 27, 29, 30 and 32 under 35 U.S.C. §103(a) as unpatentable over January (U.S. Patent No. 5,675,515) in view of Christian et al. (U.S. Patent No. 5,220,399). Claims 15, 28 and 31 were objected to as being dependent upon a rejected based claim, but would be allowable if rewritten in independent form including all of the limitations of the based claims and any intervening claims. The rejection and objection are respectfully traversed in view of the amendment and remarks presented herein.

THE OBVIOUSNESS REJECTION OF CLAIMS 27 AND 30 IS NOW MOOT

By this amendment, claims 27 and 30 are cancelled without prejudice. Therefore, the obviousness rejection of claims 27 and 30 is now moot.

THE OBVIOUSNESS REJECTION OF CLAIMS 4, 6, 8, 13, 14, 16, 20, 22, 24, 29 and 32 IS TRAVERSED

Claims 4, 6, 8, 13, 14, 16, 20, 22, 24, 27, 29, 30 and 32 were rejected as being unpatentable over January in view of Christian. The obviousness rejection is respectfully traversed because the cited references cannot support a prima facie case of obviousness.

Claim 4, 6, 8, 13, 20, 22 and 24 are directed to methods and systems for determining an alignment status of a vehicle by comparing the length of a wheel track or wheel base to either the length of the other wheel track or wheel base, or a specified range. Claim 14 is

related to a method for determining an alignment status of a vehicle by comparing the skew angles of the vehicle. The Office Action correctly recognized that January fails to teach these features. The Office Action, however, erred by relying on Christian to alleviate the deficiencies of January.

The wheel alignment system described in Christian uses emitters and sensors attached to each wheel of a vehicle to determine relative angles between wheel planes. After the relative angles are obtain, the Christian system uses the angles along with known or measured vehicle parameters, such as wheel base or wheel track, to determine wheel positions. Once the wheel positions are determined, the Christian system *compares the wheel positions relative to the vehicle frame centerline* to determine whether wheel setback exists. Christian also uses redundant emitters/sensors to cross check measurement accuracy. The Christian system compares position results obtained by different sets of sensors/emitters to verify the wheel positions. See Figs. 1, 3, 4 and 5; col. 3, lns. 18-53; col. 5, lns. 54-33; col. 7, lns. 54-57; and col. 8, ln. 56 through col. 9, ln. 13.

In rejecting claims 4, 6, 8, 13, 20, 22 and 24, the Examiner asserted that Christian teaches determining an alignment status of the vehicle based on diagonals, wheel tracks and wheel bases, as required by claims 4, 6, 8, 13, 20, 22 and 24. Applicants respectfully disagree. The sections relied on by the Examiner to reject the claims merely describe that the Christian system measures relative angles between diagonal wheel planes (col. 6, lns. 36-46). Christian does not determine an alignment status of a vehicle by *comparing the lengths of diagonals with a specific range*, as required by claim 13.

Furthermore, According to Christian, the length of wheel base or wheel track is used only for determining the position of the wheels. A wheel alignment status is obtained based

on *comparing respective wheel positions relative to the vehicle centerline*. Christian does not determine an alignment status by *comparing* the lengths of wheel track/wheel bases, or *comparing* the length of a wheel base or a wheel track to a specific range, as required by claims 4, 6, 8, 20, 22 and 24.

Although Christian's system measures angles between wheel planes, Christian does not teach measuring skew angles, which are defined as angles between diagonals and wheel tracks, as described in claim 14. Christian also fails to teach determining an alignment status by comparing the skew angles with a specific range, as required by claim 14.

Thus, January and Christian, even combined, fail to teach every limitation of claims 4, 6, 8, 13, 14, 20, 22 and 24. Accordingly, January and Christian cannot support a prima facie case of obviousness. Claims 4, 6, 8, 13, 14, 20, 22 and 24 are patentable over the cited references. Favorable reconsideration of claims 4, 6, 8, 13, 14, 20, 22 and 24 is respectfully requested.

Claim 16 depends on claim 14 and incorporates every limitation thereof. Therefore, claim 16 is also patentable over the cited references based on the same reasons discussed relative to claim 14 as well as on its own merits. Favorable reconsideration of claim 16 is respectfully requested.

By this amendment, claims 29 and 32 are rewritten into independent form. Claim 29 recites "determines the skew status by comparing the first diagonal to a specified range for the first diagonal and comparing the second diagonal to a specified range for the second diagonal," and claim 32 recites "determines the skew status by calculating a difference between the first skew angle and the second skew angle and comparing the calculated difference between the first skew angle and the second skew angle to a

specified range for the difference between the first skew angle and the second skew angle." As discussed earlier, neither January nor Christian teaches these features. Therefore, claims 29 and 32 are also patentable over the cited references. Favorable reconsideration of claims 29 and 32 is respectfully requested.

THE OBJECTION OF CLAIMS 15, 28 AND 31 IS ADDRESSED

Claims 15, 28 and 31 were objected to as being dependent upon a rejected based claim, but would be allowable if rewritten in independent form including all of the limitations of the based claims and any intervening claims. Claim 15 depends on claim 14 and incorporates every limitation thereof. As discussed earlier, claim 14 is patentable over the cited references. Therefore, claim 15 is also patentable over the cited references based on the same reasons discussed relative to claim 14 as well as on its own merits.

By this Amendment, claims 28 and 31 are rewritten in independent form and recite "determines the skew status by calculating a difference between the length of the first diagonal and the length of the second diagonal and comparing the calculated difference between the length of the first diagonal and the length of the second diagonal to a specified range for the difference between the length of the first diagonal and the length of the second diagonal," and "determines the skew status by calculating a difference between the first skew angle and the second skew angle and comparing the calculated difference between the first skew angle and the second skew angle to a specified range for the difference between the first skew angle and the second skew angle," respectively. As discussed earlier, neither January nor Christian teaches these features. Thus, January and Christian, even combined, fail to teach every limitation of

claims 28 and 31. Therefore, claims 28 and 31 are patentable over January and Christian. Favorable reconsideration of the claims is respectfully requested.

CONCLUSION

Therefore, the present application claims subject matter patentable over the references of record and is in condition for allowance. Favorable consideration is respectfully requested. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, Examiner is requested to call Applicants' attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

MCDERMOTT, WILL & EMERY

A handwritten signature in black ink, appearing to read "Wei-Chen Chen", with a stylized flourish at the end.

Wei-Chen Chen

Recognition under 37 CFR §10.9(b)

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Expires: March 1, 2004

Harry I. Moatz

Director of Enrollment and Discipline